

REMARKS/ARGUMENTS

The present invention teaches a way to form a magnetically pinned reference layer by allowing it to overlap an antiferromagnetic layer only at its edges, leaving most of the pinned layer with no contact to an antiferromagnetic layer, thereby removing the possibility of any shunting effects by the latter.

Reconsideration is requested of the rejection of claim 1 under 35 U.S.C. 103(a) as being unpatentable over Nakamoto et al. (5,936,810) in view of Ito et al. (6,44,406).

Relying on Nakamoto's FIG. 12, Examiner argues that pinned layer 33 contacts antiferromagnetic layer 21 on two outside areas and not in the center (of 21). We disagree with this argument for two reasons:

(i) Nakamoto teaches that layer 33 is a permanent magnet (col. 11 lines 58-60). By definition, a permanent magnet cannot be a pinned layer so Nakamoto teaches away from the present invention in this regard.

(ii) As currently amended, claim 1 of the present invention reads as follows:

1. A method to form a magnetically pinned reference layer for a bottom spin valve, comprising:
 - providing a layer of antiferromagnetic material having a central section that abuts a pair of opposing outer sections, said central section having a first top surface and said outer sections having second top surfaces; and
 - depositing a layer of magnetic material, a part of which contacts only said second top surfaces, thereby forming said magnetically pinned reference layer, only a part of which is in contact with said layer of antiferromagnetic material.

No new matter is involved. The term 'pinned reference layer' is defined on page 1 of our specification in the 2nd paragraph of BACKGROUND OF THE INVENTION. Neither layer 12 nor layer 33 of Nakamoto's FIGs. 2 and 12, respectively, is a reference layer (whether pinned or not). Each of layers 12 and

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33 is (in Nakomoto's own words) a 'magnetic domain control layer'. See, for example, col. 7 line 4. These correspond to layer 61 of the present invention and are not part of claim 1 so any teaching of their relationship to an antiferromagnetic layer cannot read on our claim 1.

Reconsideration is requested of the rejection of claim 3 under 35 U.S.C. 103(a) as being unpatentable over Nakamoto et al. (5,936,810) in view of Ito et al. (6,44,406).

Claim 3 is dependent on claim 1. Applicant believes that the anticipated allowance of claim 1 (in light of the above arguments) will render claim 3 allowable.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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